

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**ATTORNEY DOCKET NO. 040373-0381**

Applicant: Tatsuo NAKAYAMA, et al.  
Title: ELECTRODE, METHOD FOR MANUFACTURING THE SAME  
AND SEMICONDUCTOR DEVICE USING THE SAME  
Appl. No.: Unassigned  
Filing Date: April 7, 2006  
Examiner: Unassigned  
Art Unit: Unassigned

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR §1.56**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

**TIMING OF THE DISCLOSURE**

The listed documents are being submitted in compliance with 37 CFR §1.97(b), within three (3) months of the date of entry of the national stage as set forth in 37 CFR §1.491.

**RELEVANCE OF EACH DOCUMENT**

Documents A1-A4, A7-A10 and A12 are U.S. counterparts of Document A13.

Documents A5 and A6 are U.S. counterparts of Document A17.

Document 11 is a U.S. counterpart of Document A24.

The relevance of Documents A14 and A25 is described in the present application.

Document A13 relates to an electrode of n-type gallium nitride compound semiconductor layer.

Document A16 relates to an ohmic electrode and forming method therefor.

Document A18 relates to a gallium nitride compound semiconductor device and manufacture thereof.

Document A19 relates to an ohmic electrode and forming method thereof.

Document A24 relates to a n-type electrode for III nitride-system compound semiconductor element.

Documents A15, A17 and A20-A23 listed on the attached PTO/SB/08 were cited as being relevant during the prosecution of the corresponding International application. A copy of the International Search Report is attached setting forth the portion of each document considered relevant by the examiner. English translations of the foreign-language documents

Appl. No. Unassigned

Atty. Dkt. No. 040373-0381

are not readily available; however, English language abstracts are attached herewith.. The absence of such translations does not relieve the PTO from its duty to consider the submitted documents (37 CFR §1.98 and MPEP §609).

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Although Applicants believe that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 19-0741.

Respectfully submitted,

April 7, 2006  
Date

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10/574933

MODIFIED PTO/SB/08 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449B/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: April 7, 2006

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	Unassigned
Filing Date	03/07/2006
First Named Inventor	Tatsuo NAKAYAMA, et al.
Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	040373-0381

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A1	5,563,422		NAKAMURA et al.	10-08-1996	
	A2	5,652,434		NAKAMURA et al.	07-29-1997	
	A3	5,767,581		NAKAMURA et al.	06-16-1998	
	A4	5,877,558		NAKAMURA et al.	03-02-1999	
	A5	6,011,281		NUNOKAWA et al.	01-04-2000	
	A6	6,146,931		NUNOKAWA et al.	11-14-2000	
	A7	6,093,965		NAKAMURA et al.	07-25-2000	
	A8	6,204,512		NAKAMURA et al.	03-20-2001	
	A9	6,507,041		NAKAMURA et al.	01-14-2003	
	A10	6,610,995		NAKAMURA et al.	08-26-2003	
	A11	2004/0026701		MURAI et al.	02-12-2004	
	A12	6,998,690		NAKAMURA et al.	02-14-2006	

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	A13	JP	07-045867		NICHIA CHEM. IND. LTD.	02-14-1995		Abst.
	A14	JP	07-248204		FUJITSU LTD.	09-26-1995		Abst.
	A15	JP	09-219539		NICHIA CHEM. IND. LTD.	08-19-1997		Abst.
	A16	JP	10-022494		SONY CORPORATION	01-23-1998		Abst.
	A17	JP	11-162996		FUJITSU QUANTUM DEVICE	06-18-1999		Abst.
	A18	JP	11-220168		TOYODA GOSEI CO LTD.	08-10-1999		Abst.
	A19	JP	11-330558		SANYO ELECTRIC CO. LTD.	11-30-1999		Abst.
	A20	JP	2000-164928		TOSHIBA CORPORATION	06-16-2000		Abst.
	A21	JP	2001-148533		SHARP CORPORATION	05-29-2001		Abst.
	A22	JP	2001-196574		THE FURUKAWA ELECTRIC CO. LTD.	07-19-2001		Abst.
	A23	JP	2002-319593		THE FURUKAWA ELECTRIC CO. LTD.	10-31-2002		Abst.
	A24	JP	2003-077862		TOYODA GOSEI CO LTD.	03-14-2003		Abst.

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	A25	KUMAR et al., "Thermally-Stable Low-Resistance Ti/Al/Mo/Au Multilayer Ohmic Contacts on <i>n</i> -CaN," Journal of Applied Physics, Vol. 92, No. 3, August 1, 2002, pp. 1712-1714.	

Examiner  
Signature

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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